

WHAT IS CLAIMED IS:

1. An offset measuring method for receiving signals from a radio base station and measuring a transmitting time offset of the radio base station, comprising the steps of:

calculating estimated values of transmitting time offset based on signals received at a plurality of observation points; and

selecting a minimum from the estimated offset values to determine the minimum value as a measured value of transmitting time offset of the radio base station.

2. The offset measuring method according to claim 1, wherein the estimated offsets are each calculated from a time at which a particular signal is transmitted from the radio base station, a time at which the particular signal transmitted from the radio base station is received, and a distance between the radio base station and a receiving antenna.

3. The offset measuring method according to claim 1, wherein an average of the estimated offsets measured at each of the observation locations multiple times is the estimated offset of the location.

4. The offset measuring method according to claim 1, wherein, if the received signal is not good, the signal is excluded from offset measuring.

5. The offset measuring method according to claim 1, wherein timing information used as a base of

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the offset measurement is generated from GPS satellites.

6. The offset measuring method according to claim 1, wherein timing information used as a base of the offset measurement is generated from a base station other than the base station 131 whose offset is to be measured.

7. An offset measuring apparatus which receives signals from a radio base station and which measures transmitting time offsets of the radio base station, said offset measuring apparatus comprising:

offset estimating means which comprises a cellular receiver that receives, at a plurality of locations, signals transmitted from the radio base station; a measuring unit for received timing that measures a received timing of a signal transmitted from said radio base station with reference to base clocks; and an offset calculating unit that calculates estimated values of transmitting time offset of said radio base station from the measured received timing; and

offset determining means for selecting a minimum of the estimated values of transmitting time offset and for determining the selected minimum as a measured value of transmitting time offset.

8. The offset measuring apparatus according to claim 7, wherein said offset measuring apparatus has a plurality of offset estimating means to receive the

signals from the base station at a plurality of locations.

9. The offset measuring apparatus according to claim 8, wherein said offset estimating means calculates an average of the estimated values of transmitting time offset, which are measured multiple times, as the estimated offset of said offset estimating means.

10. The offset measuring apparatus according to claim 7, wherein said offset measuring means has a plurality of antennas to receive the signals from the radio base station at a plurality of locations.

11. The offset measuring apparatus according to claim 10, wherein said plurality of antennas are separated one another at a specified distance apart, further comprising an antenna selector that switches the antennas for connection to said receiving unit.

12. The offset measuring apparatus according to claim 10, wherein said antennas are separated one another at least  $1/4$  of a wavelength of the received signal.

13. The offset measuring apparatus according to claim 10, wherein said offset estimating means uses each of said antennas to calculate an average of the estimated values of transmitting time offset, which are measured multiple times, as the estimated offset of the antenna.

14. The offset measuring apparatus according to

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claim 7, wherein said offset measuring device, which is movable, moves around multiple observation points to receive the signals from the base station and measures the received timings of the signals transmitted from the base station.

15. The offset measuring apparatus according to claim 7, further comprising a GPS receiver that generates the base clocks from signals received from a GPS satellite by said GPS receiver.

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